CLAIMS

1. A method for limiting error propagation due to scrambler seed value transmission errors in a wireless communication network comprising at least one transmitting device 1 and at least one receiving device 2, wherein each transmitting device 1 has an associated transmitting address and each receiving device 2 has at least one associated receiving address, wherein each transmitting device 1 applies a forward error correction code to transmitted messages followed by scrambling of the message, and the scrambling is generated from a seed value, and each transmitted message is structured in such a manner that said seed value can be inferred at a receiving device 2 in the case of an error-free received message, the method comprising the steps of:

-providing state information at the transmitting device 1 for each message transmitted from said transmitting device 1 in such a manner that the transmitting device 1 can generate a sequence of seed values associated with each receiving address,

-providing state information at the receiving device 2 for each received message in such a manner that the receiving device 2 can generate sequences of seed values, each sequence associated with a unique combination of a transmitting address and a receiving address,

-the transmitting device 1 attempting to retrieve state information regarding a receiving address associated with the receiving device 2,

-if no state information is retrievable by said transmitting device 1 such state information is generated by an arbitrary method in order to generate a new seed value for a message to be transmitted,

-if state information is retrievable by said transmitting device 1, this information is utilized to initialize a first seed-generating algorithm in order to generate a new seed value for the message to be transmitted, and is updated by said algorithm,

-applying a scrambling algorithm initialized by the new seed value to said message to be transmitted, thereby creating a scrambled message,

-transmitting the scrambled message from said transmitting device 1,

-receiving and descrambling the scrambled message at said receiving device 2, based on the seed value deduced from the received message,

-checking the received descrambled message for errors that are not corrected by the forward error correction code,

-using received messages that are free from errors to synchronize a second seed-generating algorithm in said receiving device 2 with said first seed-generating algorithm in said transmitting device 1,

-using a current local seed value in said receiving device 2 to attempt to correct errors in the descrambled message caused by an incorrect received seed.

2. A method according to claim 1, wherein said receiving device 2 performing a search of some or all of the current local seed values of each seed sequence at the receiving device 2 and using each such seed value from the search in an attempt to correctly receive the message.

3. A method according to claim 1, wherein using said current local seed value in said receiving device 2 to synchronize said second seed-generating algorithm in the receiving device 2 with said first seed-generating algorithm in said transmitting device 1, if the message is free from errors following the attempt to correct errors in the descrambled message caused by an incorrect received seed.

4. A method according to claim 1, wherein said first seed-generating algorithm at the transmitting device 1 generating the same sequence of seed value as said second seed-generating algorithm at the receiving device 2, when correctly synchronized.

5. A method according to claim 1, further comprising the step of determining the next seed value in said sequence of seed values at the transmitting device 1 from at least the current seed value.

6. A method according to claim 1, further comprising the step of causing said first seed-generating algorithm at said transmitting device 1 to move to the next seed value in said sequence of seed values at the transmitting device 1 and update the state information for said receiving address for each transmitted message.

7. A method according to claim 1, further comprising the step of causing said second seed-generating algorithm at said receiving device 2 to move to the next seed value in said sequence of seed values at the receiving device 2 and update the state information for said transmitting and receiving addresses for each correctly received message.

8. A method for limiting error propagation due to scrambler seed value transmission errors in a wireless communication network the method comprising the steps of:

-providing state information at a transmitting device for each message transmitted from said transmitting device,

-providing state information at a receiving device for each received message,

-attempting to retrieve state information by the transmitting device regarding a receiving address associated with the receiving device,

-if no state information is retrievable by said transmitting device such state information is generated by an arbitrary method in order to generate a new seed value for a message to be transmitted,

-if state information is retrievable by said transmitting device, this information is utilized to initialize a first seed-generating algorithm in order to generate a new seed value for the message to be transmitted, and is updated by said algorithm,

-applying a scrambling algorithm initialized by the new seed value to said message to be transmitted, thereby creating a scrambled message,

-transmitting the scrambled message from said transmitting device,

-receiving and descrambling the scrambled message at said receiving device, based on the seed value deduced from the received message,

-checking the received descrambled message for errors that are not corrected by a forward error correction code.

9. A method according to claim 8, further comprising the steps of

-using received messages that are free from errors to synchronize a second seed-generating algorithm in said receiving device with said first seed-generating algorithm in said transmitting device,

-using a current local seed value in said receiving device to attempt to correct errors in the descrambled message caused by an incorrect received seed.

10. A method according to claim 9, wherein said receiving device performing a search of some or all of the current local seed values of each seed sequence at the receiving device and using each such seed value from the search in an attempt to correctly receive the message.

11. A method according to claim 9, wherein using said current local seed value in said receiving device to synchronize said second seed-generating algorithm in the receiving device with said first seed-generating algorithm in said transmitting device, if the message is free from errors following the attempt to correct errors in the descrambled message caused by an incorrect received seed.

12. A method according to claim 9, wherein said first seed-generating algorithm at the transmitting device generating the same sequence of seed value as said second seed-generating algorithm at the receiving device, when correctly synchronized.

13. A method according to claim 9, further comprising the step of determining the next seed value in said sequence of seed values at the transmitting device 1 from at least the current seed value.

14. A method according to claim 9, further comprising the step of causing said first seed-generating algorithm at said transmitting device 1 to move to the next seed value in said sequence of seed values at the transmitting device 1 and update the state information for said receiving address for each transmitted message.

15. A method according to claim 9, further comprising the step of causing said second seed-generating algorithm at said receiving device 2 to move to the next seed value in said sequence of seed values at the receiving device 2 and update the state information for said transmitting and receiving addresses for each correctly received message.